We claim:

1. A configurable mobile I/O device system comprising:

a configuration management system including a configuration module for mobile I/O devices, a plurality of software modules having at lease one application module and at lease one operating system module accessible by said configuration module, and at lease one external communications link configured to allow operable two-way communication between at least one external mobile I/O device and said configuration module; and

at least one mobile I/O device having a plurality of enablable functions, a limited capacity system having a processor and a memory, said limited capacity system being operatively coupled to said enablable functions and an external communications link operatively configured to allow two-way communication with said configuration module, wherein said configuration module employs initial input to identify and download to said at least one mobile I/O device and enabled set of said software modules, enabling at least one of said plurality of enablable functions.

pub A3>

2. The configurable hand-held I/O device system of Claim 1, wherein said plurality of software modules and said enabled set of software modules further include a sequencer module which sequences data from said enabled functions such that if multiple application modules request data from any one of said enabled functions, the order in which the data is requested is preserved when the data is received.

3. The configurable hand-held I/O device system of Claim 1, wherein said plurality of software modules and said enabled set of software modules further include a filter module which filters incoming data from said enabled functions eliminating data which does not meet an application module's requirements.

4. The configurable hand-held I/O device system of Claim 1, wherein said plurality of software modules and said enabled set of software modules further include a synchronization module which synchronizes data from more than one enabled function such that only one type of data is sent at one time to a single application module.

5. The configurable hand-held I/O device system of Claim 1, wherein said configuration module further includes a comparator module which compares formats of said initial input coming from said at least one hand-held I/O device and compares it with a predetermined list of input formats to determine enablable function types.

6. The configurable hand-held I/O device system of Claim 1, wherein said configuration module further includes a tag detector module, said tag detector configured to detect and use tag fields in said initial input coming from said at least one hand-held I/O device to determine the input and hand-held I/O device types.

7. The configurable hand-held I/O device system of Claim 1, wherein said at least one operating system module further includes a type analyzer which determines which application module to send input coming from said at least one enabled function.

8. The configurable hand-held I/O device system of Claim 7, wherein said application receiving said input is a data translator application and where output from said data translator application is sent to a second application module.

9. The configurable hand-held I/O device system of Claim 1, wherein said at least one hand-held I/O device further includes at least one field programmable gate array operably coupled to said limited capacity system

10. The configurable hand-held I/O device system of Claim 9, wherein said at least one operating system module further includes a program module to program and configure said at least one field programmable gate array to act as a data translator module.

11. The configurable hand-held I/O device system of Claim 1, wherein said initial input is operably derived from a user interface operably connected to said configuration module.

Sub A3

12. The configurable hand-held I/O device system of Claim 1, wherein said initial input is operably derived from application input to said configuration module.

pub A3

13. A hand-held I/O device comprising:

a plurality of enablable functions;

a limited capacity system having a processor, a memory operably coupled to said processor, said processor being operatively coupled to said plurality of enablable functions;

a communications link having an internal portion and an external portion, said internal portion operatively coupled to said limited capacity system and said external portion configured to allow operable two-way communication between said limited capacity system and an external system; and

at least one software module operably and replaceably residing in said memory such that at least one of said plurality of enablable functions is enabled.

14. The hand-held I/O device system of Claim 13, wherein said at least one software module further includes a sequencer module which sequences data from said at least one enabled functions such that if multiple application modules request data from any one of said enabled functions, the order in which the data is requested is preserved when the data is received.

15. The hand-held I/O device system of Claim 13, wherein said at least one software module further includes a filter module which filters the contents of data coming from said at least one enabled function, eliminating data which does not meet an application module's requirements.

16. The hand-held I/O device of Claim 13, wherein said at least one software module further includes a synchronization module which synchronizes data from more than one enabled function such that only one type of data is sent at one time to a single application module.

17. The hand-held I/O device of Claim 13, wherein said at least one software module further includes a tag detector module which determines which application module to send input coming from said at least one enabled function based on tag fields in said input.

18. The hand-held I/O device of Claim 13, wherein said at least one software module further includes a type analyzer module which determines which application module to send input coming from said at least one enabled function depending on its type.

19. The hand-held I/O device of Claim 18, wherein said application module receiving said input is a data translator application and wherein output from said data translator application is sent to a second application module.

20. The hand-held I/O device of Claim 13 further comprising at least one field programmable gate array operably coupled to said limited capacity system.

21. The hand-held I/O device of Claim 20, wherein said at least one software module further includes a program module to program and configure said at least one field programmable gate array to act as a data translator module.

22. A configuration management system for hand-held I/O devices comprising:

a configuration module;

a plurality of software modules including at least one application and at least one operating system module accessible by said configuration module; and

a communications link having, an internal portion and an external portion, said internal portion operatively coupled to said configuration module and said external portion configured to allow operable two-way communications between said configuration module and at least one hand-held I/O device, wherein said configuration module employs input to identify, enable, and download a set of software modules from said plurality of software modules, said set of software modules configured to enable functionality in a hand-held I/O device identified by said input.

Dub A3

23. The configuration management system for hand-held I/O devices of Claim 22, wherein said plurality of software modules further includes a sequencer module which is configured to sequence data such that if multiple application modules request data from any one of a set of enabled functions in a hand-held I/O device, the order in which the data is requested is preserved when the data is received.

24. The configuration management system for hand-held I/O devices of Claim 22 wherein said plurality of software modules further includes a filter module which is configured to filter data coming from an enabled function in a hand-held I/O device and eliminate data which does not meet an application module's requirements.

25. The configuration management system for hand-held I/O devices of Claim 22, wherein said plurality of software modules further includes a synchronization module configured to synchronize data coming from more than one enabled function in a hand-held I/O device such that only one type of data is sent at one time to a single application module.

26. The configuration management system for hand-held I/O devices of Claim 22, wherein said plurality of software modules further includes a tag detector module configured to determine which application module to send input coming from an enabled function in a handheld I/O device based on tag fields in said input.

27. The configuration management system for hand-held I/O devices of Claim 22, wherein said plurality of software modules further includes a type analyzer module configured to determine which application module to send input coming from an enabled function in a hand-held I/O device depending on its type.

28. The configuration management system for hand-held I/O devices of Claim 22, wherein said plurality of software modules further includes a data translator application module.

29. The configuration management system for hand-held I/O devices of Claim 22, wherein said plurality of software modules further includes a program module configured to program and configure a field programmable gate array.

30. A method of configuring and using a configurable hand-held I/O device comprising:

uploading input from a hand-held I/O device; determining the type of said input from said hand-held I/O device;

having accessible a plurality of software modules including at least one application software module and at least one operating system software module;

choosing a set of software modules from said plurality of software modules such that said set of software modules will enable said hand-held I/O device to process said input type;

downloading said set of software modules to said hand-held I/O device;

configuring said hand-held I/O device with said downloaded software modules;

receiving further input using said configured hand-held I/O device; and

processing said further input using said configured hand-held I/O device.

pub A3

31. The method of Claim 30, further comprising filtering said further input to eliminate data not meeting an application's requirements.

32. The method of Claim 30, further comprising synchronizing said further input such that one type of data is sent to one application module at a time.

33. The method of Claim 30, further comprising comparing said uploaded input to a predetermined list of input types to determine an input type.

34. The method of Claim 30, further comprising using a tag in said uploaded input to determine an input type.

35. The method of Claim 30, further comprising carrying out data format conversion in said processing.

36. The method of Claim 35, wherein carrying out said data format conversion uses a field programmable gate array.

pub A3

37. The method of Claim 36, further comprising configuring a field programmable gate array to perform a desired data format conversion.

DUB A3

38. A method of configuring a configurable hand-held I/O device comprising:

receiving a configuration request for at least one hand-held I/O device;

having accessible a plurality of software modules including at least one application software module and at least one operating system software module;

choosing a set of software modules from said plurality of software modules such that said set of software modules will enable said at least one hand-held I/O device to process I/O data consistently with said configuration request;

downloading said set of software modules to said at least one hand-held I/O device; and

configuring said hand-held I/O device with said downloaded software modules.

39. The method of Claim 38, further comprising receiving a request from a user of a central system to configure at least one hand-held I/O device.

40. The method of Claim 38, further comprising receiving a request from an application module to configure at least one hand-held I/O device.

41. The method of Claim 38, further comprising configuring said hand-held I/O device with a filtering module to eliminate data not meeting an application's requirements.

42. The method of Claim 38, further comprising configuring said hand-held I/O device with a synchronizing module such that one type of data is sent to one application module at a time.

43. The method of Claim 38 further comprising configuring said hand-held I/O device with a data format conversion module.

44. The method of Claim 43, wherein the data format conversion module uses a field programmable gate array.

45. The method of Claim 44, further comprising configuring a field programmable gate array to perform a desired data format conversion.

pub A3

46. A configurable portable I/O device system comprising:

a configuration management system including a configuration module for portable I/O devices, a plurality of software modules having at least one application module and at least one operating system module accessible by said configuration module, and at least one external communications link configured to allow operable two-way communication between at least one external portable I/O device and said configuration module; and

at least one portable I/O device having a plurality of enablable functions, a limited capacity system having a processor and a memory, said limited capacity system being operatively coupled to said enablable functions., and an external communications link operatively configured to allow two-way communication with said configuration module, wherein said configuration module employs initial input to identify and download to said at least one portable I/O device an enabled set of said software modules, enabling at least one of said plurality of enablable functions.

47. The configurable portable I/O device system of Claim 46, wherein said at least one portable I/O device is battery powered.

pub A3

48. The configurable portable I/O device system of Claim 46, wherein said plurality of software modules and said enabled set of software modules further include a sequencer module which sequences data from said enabled functions such that if multiple application modules request data from any one of said enabled functions, the order in which the data is requested is preserved when the data is received.

49. The configurable portable I/O device system of Claim 46, wherein said plurality of software modules and said enabled set of software modules further include a filter module which filters incoming data from said enabled functions eliminating data which does not meet an application module's requirements.

pub 13

50. The configurable portable I/O device system of Claim 46, wherein said plurality of software modules and said enabled set of software modules further include a synchronization module which synchronizes data from more than one enabled function such that only one type of data is sent at one time to a single application module.

51. The configurable portable I/O device system of Claim 46, wherein said configuration module further includes a comparator module which compares formats of said initial input coming from said at least one portable I/O device and compares it with a predetermined list of input formats to determine enablable function types.

52. The configurable portable I/O device system of Claim 46, wherein said configuration module further includes a tag detector module, said tag detector module configured to detect and use tag fields in said initial input coming from said at least one portable I/O device to determine the input and portable I/O device types.

53. The configurable portable I/O device system of Claim 46, wherein said at least one operating system module further includes a type analyzer which determines which application module to send input coming from said at least one enabled function.

54. The configurable portable I/O device system of Claim 53, wherein said application receiving said input is a data translator application and wherein output from said data translator application is sent to a second application module.

55. The configurable portable I/O device system of Claim 46, wherein said at least one portable I/O device further comprises at least one field programmable gate array operably coupled to said limited capacity system.

56. The configurable portable I/O device system of Claim 55, wherein said at least one operating system module further includes a program module to program and configure said at least one field programmable gate array to act as a data translator module.

57. The configurable portable I/O device system of Claim 46, wherein said initial input is operably derived from a user interface operably connected to said configuration module.

58. The configurable portable I/O device system of Claim 46 wherein said initial input is operably derived from application input to said configuration module.

59. A portable I/O device comprising:

a plurality of enablable functions;

a limited capacity system having a processor, a memory operably coupled to said processor, said processor being operatively coupled to said plurality of enablable functions;

a communications link having an internal portion and an external portion, said internal portion operatively coupled to said limited capacity system and said external portion configured to allow operable two-way communication between said limited capacity system and an external system; and

at least one software module operably and replaceably residing in said memory such that at least one of said plurality of enablable functions is enabled.

60. The portable I/O device of Claim 59, further comprising a battery as a power source.

61. The portable I/O device of Claim 59, wherein said at least one software module further includes a sequencer module which sequences data from said at least one of said enabled functions such that if multiple application modules request data from any one of said enabled functions, the order in which the data is requested is preserved when the data is received.

62. The portable I/O device of Claim 59, wherein said at least one software module further includes a filter module which filters the contents of data coming from said at least one of said enabled functions, eliminating data which does not meet an application module's requirements.

63. The portable I/O device of Claim 59, wherein said at least one software module further includes a synchronization module which synchronizes data from more than one enabled function such that only one type of data is sent at one time to a single application module.

64. The portable I/O device of Claim 59, wherein said at least one software module further includes a tag detector module which determines which application module to send input coming from said at least one enabled function based on tag fields in said input.

65. The portable I/O device of Claim 59, wherein said at least one software module further includes a type analyzer module which determines which application module to send input coming, from said at least one enabled function depending on its type.

66. The portable I/O device of Claim 65, wherein said application module receiving said input is a data translator application and where output from said data translator application is sent to a second application module.

67. The portable I/O device of Claim 59, further comprising at least one field programmable gate array operably coupled to said limited capacity system.

68. The portable I/O device of Claim 67, wherein said at least one software module further includes a pro-ram module to program and configure said at least one field programmable gate array to act as a data translator module.

69. A configuration management system for portable I/O devices comprising:

a configuration module;

a plurality of software modules including at least one application and at least one operating system module accessible by said configuration module; and

a communications link having an internal portion and an external portion, said internal portion operatively coupled to said configuration module and said external portion configured to allow operable two-way communications between said configuration module and at-least one portable I/O device, wherein said configuration module employs input to identify, enable, and download a set of software modules from said plurality of software modules, said set of software modules configured to enable functionality in a portable I/O device identified by said input.

70. The configuration management system for portable I/O devices of Claim 69, wherein said external portion of said communications link is further configured to allow operable two-way communications between said configuration module and at least one battery powered portable I/O device.

71. The configuration management system for portable I/O devices of Claim 69, wherein said set of software modules configured to enable functionality in a portable I/O device further enables functionality in a battery powered portable I/O device.

72. The configuration management system for portable I/O devices of Claim 69, wherein said plurality of software modules further includes a sequencer module which is configured to sequence data such that if multiple application modules request data from any one of a set of enabled functions in a portable I/O device, the order in which the data is requested is preserved when the data is received.

73. The configuration management system for portable I/O devices of Claim 69, wherein said plurality of software modules further includes a filter module which is configured to filter data coming from an enabled function in a portable I/O device and eliminate data which does not meet an application module's requirements.

74. The configuration management system for portable I/O devices of Claim 69, wherein said plurality of software modules further includes a synchronization module configured to synchronize data coming from more than one enabled function in a portable I/O device such that only one type of data is sent at one time to a single application module.

75. The configuration management system for portable I/O devices of Claim 69, wherein said plurality of software modules further includes a tag detector module configured to determine which application module to send input coming from an enabled function in a portable I/O device based on tag fields in said input.

76. The configuration management system for portable I/O devices of Claim 69, wherein said plurality of software modules further includes a type analyzer module configured to determine which application module to send input coming from an enabled function in a portable I/O device depending on its type.

77. The configuration management system for portable I/O devices of Claim 69, wherein said plurality of software modules further includes a data translator application module.

78. The configuration management system for portable I/O devices of Claim 69, wherein said plurality of software modules further includes a program module configured to program and configure a field programmable gate array.

79. A method of configuring and using a configurable portable I/O device comprising:

uploading input from the portable I/O device;

determining the type of said input from the portable I/O device;

having accessible a plurality of software modules including at least one application software module and at least one operating system software module;

choosing a set of software modules from said plurality of software modules such that said set of software modules will enable the portable I/O device to process said input type;

downloading said set of software modules to the portable I/O device;

configuring the portable I/O device with said downloaded software modules;

receiving further input using the configured portable I/O device; and

processing said further input using the configured portable I/O device.

pub A3

80. The method of Claim 79, further comprising filtering said further input to eliminate data not meeting an application's requirements.

81. The method of Claim 79, further comprising synchronizing said further input such that one type of data is sent to one application module at a time.

82. The method of Claim 79, further comprising comparing said uploaded input to a predetermined list of input types to determine an input type.

83. The method of Claim 79, further comprising using a tag in said uploaded input to determine an input type.

84. The method of Claim 79, wherein the portable I/O device further includes a battery powered portable I/O device.

85. The method of Claim 79, further comprising carrying out data format conversion in said processing.

86. The method of Claim 85, wherein said carrying out data format conversion is performed with a field programmable gate array.

87. The method of Claim 86, further comprising configuring the field programmable gate array to perform a desired data format conversion.

DUB A3

88. A method of configuring a configurable portable I/O device comprising:

receiving a configuration request for at least one portable I/O device;

having accessible a plurality of software modules including at least one application software module and at least one operating system software module;

choosing a set of software modules from said plurality of software modules such that said set of software modules will enable said at least one portable I/O device to process I/O data consistently with said configuration request;

downloading said set of software modules to said at least one portable I/O device; and

configuring said portable I/O device with said downloaded software modules.

89. The method of Claim 88, further comprising receiving a request from a user of a central system to configure at least one portable I/O device.

Sub A3

90. The method of Claim 88, further comprising receiving a request from an application module to configure at least one portable I/O device.

91. The method of Claim 88, further comprising configuring said portable I/O device with a filtering module to eliminate data not meeting an application's requirements.

92. The method of Claim 88, further comprising configuring said portable I/O device with a synchronizing module such that one type of data is sent to one application module at a time.

93. The method of Claim 88, wherein said portable I/O device further comprises a battery powered portable I/O device.

94. The method of Claim 88, further comprising configuring said portable I/O device with a data format conversion module.

95. The method of Claim 94, wherein said data format conversion module uses a field programmable gate array.

96. The method of Claim 95, further comprising configuring a field programmable gate array to perform a desired data format conversion.